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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/805,184	NAMIZUKA, YOSHIYUKI	
	Examiner	Art Unit	
	Iriana Cruz	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :1/19/2006,08/09/2004,07/21/2004.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 25 is rejected under 35 U.S.C. 101 because fails to fall within a statutory category of invention. It is directed to the program itself, nota process occurring as a result of executing the program, a machine programmed to operate in accordance with the program nor a manufacture structurally and functionally interconnected with the program in a manner which enables the program to act as a computer component and realize its functionality. It is also clearly not directed to a composition of matter. Therefore, it is non-statutory under 35 USC 101.

Examples of acceptable language in computer-processing related claims:

"computer readable medium" encoded with _____

a. “a computer program”

b. “software”

c. "computer executable instructions”

d. “instructions capable of being executed by a computer”

“a computer readable medium” _____ “computer program”

a. storing a

b. embodied with a

c. encoded with a

d. having a stored

e. having encoded

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Kurozasa (US Patent Number 6,278,526 B1).

Regarding **Claim 1**, Shimizu'701 shows an image reproduction apparatus including an image copying function for reproducing input image data including image data obtained by reading a document, and for outputting the reproduced image data (i.e., a copy machine copies the image information from an original and outputs the information. See Paragraphs 4 and 7), the image reproduction apparatus comprising: extension control means to which a controller board is connectable to add one or more optional units to realize one or more desired extension functions (i.e., the extension connector allows an extension board to be connected to the apparatus. See Paragraphs 42-44 and See Figure 3), the extension control means allowing operation control in the extension functions to be performed in a same manner as in the image copying function (i.e., the extension controller allows control from external devices connected to the scanner, printer or other extension connected. See Paragraphs 44 and 49), and

allowing image data to be input/output in the extension functions in a same format as in the image copying function (i.e., the image data from the extension is input/output like the image copying functions. See Paragraphs 44-46 and 100 See Figure 3 numerals 53 and 49); operation control means for controlling operation in a similar manner regardless of whether the operation is associated with the image copying function or the one or more extension functions provided by the extension control means (i.e., the operations control are the same for everything. See Paragraphs 57-60); resource sharing means for allowing a resource used in the image copying function to also be used by the extension control means in inputting and/or outputting image data (i.e., the paper is found on the paper unit and when any of the functions use paper the all use the paper from the same place. See Paragraphs 28 and See Figure 1 and 2); image input means for reading an image of the document (i.e., the input the scanner and the host computer connected to the apparatus. See Figure 1 and 2) and outputting image data of the document image (i.e., the output printer and the host computer connected to the apparatus. See Figure 1 and 2); and image input/output control means for controlling inputting/outputting of image data depending on an output characteristic of image data output from the image input means such that the image input means inputs/outputs image data in the same form (i.e., Controller section. See Figure 1 numeral 110).

Shimizu'701 fails to show an image quality retaining means for retaining a quality of an image reproduced via the extension control means at a high level similar to that of an image produced by the image copying function.

Kurozasa'526 teaches an image quality retaining means for retaining a quality of an image reproduced via the extension control means at a high level similar to that of an image produced by the image copying function (i.e., the image signal processing unit includes an image quality correction unit. See Column 7, Lines 4-10).

Having the system of Shimizu'701 and then given the well-established teaching of the Kurozasa'526, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 as taught by the Kurozasa'526, since it helps improve the image quality as suggested in reference Kurozasa'526 Column 7, Lines 14-16.

Regarding **Claim 5**, the combination of Shimizu'701 and Kurozasa'526 shows an image reproduction apparatus wherein the image input means is one of a contact image sensor and a charge coupled device (i.e., an image sensor or CCD that stands for charged coupled device. See Column 4, Lines 35-37 in reference Kurozasa'526).

4. **Claims 2, 4 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Kurozasa (US Patent Number 6,278,526 B1) and further in view of Murata et al. (US Patent Number 6,278,513 B1).

Regarding **Claim 2**, the combination of Shimizu'701 and Kurozasa'526 (although suggest a resolution conversion) fails to show an image reproduction apparatus with line decimation control means for converting the resolution of the image data; and pixel

loss compensation means for compensating for a loss of pixel information caused by line decimation.

Murata'513 teaches an image reproduction apparatus with line decimation control means for converting the resolution of the image data (i.e., the line thinning/decimation means reduces the lines resolution of the image. See Column 3, Lines 64-67); and pixel loss compensation means for compensating for a loss of pixel information caused by line decimation (i.e., interpolation between lines means avoids degradation of resolution of the quality of images. See Column 3, Lines 42-47).

Having the system of Shimizu'701 and Kurozasa'526 and then given the well-established teaching of the Murata'513, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 and Kurozasa'526 as taught by the Murata'513, since using line thinning means is a simpler structure and it eliminates the necessity of raising the secondary scanning speed to process the resolution as suggested in reference Murata'513 Column 4, Lines 4-10.

Regarding **Claim 4**, the combination of Shimizu'701, Kurozasa'526 and Murata'513 shows a image reproduction apparatus wherein the line decimation control means divides a control signal specifying a reading line into a plurality of control signals and divides a single functional module into a plurality of functions (i.e., there is a plurality of modes/functions where the CPU functions as the decimation means by reducing the image data in size. See Column 1, Lines 49-60 and Column 10, Lines 60-65 in reference Kurozasa'526), thereby controlling a density conversion (i.e., the control

signal is used to perform density conversion. See Column 4, Lines 40-50 in reference Kurozasa'526).

Regarding **Claim 7**, the combination of Shimizu'701, Kurozasa'526 and Murata'513 shows a image reproduction apparatus wherein the line decimation control means performs decimation in an optimum manner; and the pixel loss compensation means performs compensation in an optimum manner depending on whether image data is color image data or monochrome image data (i.e., the type of image ((color or monochrome)) will decide how optimum is going to be the decimation depending on the image the mode is chosen. See Column 1, Lines 49-60 in reference Kurozasa'526).

5. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Kurozasa (US Patent Number 6,278,526 B1) and further in view of Feng et al. (US Patent Number 7,312,898 B2).

Regarding **Claim 3**, the combination of Shimizu'701 and Kurozasa'526 (although suggests transmitting and receiving image data to and from the extension control means) fails to show an image reproduction apparatus comprising data format conversion means for converting a data format of image data such that transmission and reception of image data to and from the extension control means is performed in a same manner, regardless of whether the image data is color image data or monochrome image data.

Feng'898 teaches an image reproduction apparatus comprising data format conversion means for converting a data format of image data such that transmission

and reception of image data to and from the extension control means is performed in a same manner, regardless of whether the image data is color image data or monochrome image data (i.e., format conversion means that converts the data to the chosen format to perform the communication protocol. See Column 1, Lines 6-13).

Having the system of Shimizu'701 and Kurozasa'526 and then given the well-established teaching of the Feng'898, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 and Kurozasa'526 as taught by the Feng'898, since using format conversion means allows the image reproduction apparatus support a variety of document types and communication protocols as suggested in reference Feng'898 Column 1, Lines 11-12.

6. **Claim 8, 10, 11 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Kurozasa (US Patent Number 6,278,526 B1), further in view of Murata et al. (US Patent Number 6,278,513 B1) and further in view of Kelly et al. (US Patent Number 5,727,083).

Regarding **Claim 8**, Shimizu'701 shows an image reproduction apparatus including an image copying function for reproducing input image data including image data obtained by reading a document, and for outputting the reproduced image data (i.e., a copy machine copies the image information from an original and outputs the information. See Paragraphs 4 and 7), the image reproduction apparatus comprising: extension control means to which a controller board is connectable to add one or more optional units to realize one or more desired extension functions (i.e., the extension

connector allows an extension board to be connected to the apparatus. See Paragraphs 42-44 and See Figure 3), the extension control means allowing operation control in the extension functions to be performed in a same manner as in the image copying function (i.e., the extension controller allows control from external devices connected to the scanner, printer or other extension connected. See Paragraphs 44 and 49), and allowing image data to be input/output in the extension functions in a same format as in the image copying function (i.e., the image data from the extension is input/output like the image copying functions. See Paragraphs 44-46 and 100 See Figure 3 numerals 53 and 49); operation control means for controlling operation in a similar manner regardless of whether the operation is associated with the image copying function or the one or more extension functions provided by the extension control means (i.e., the operations control are the same for everything. See Paragraphs 57-60); resource sharing means for allowing a resource used in the image copying function to also be used by the extension control means in inputting and/or outputting image data (i.e., the paper is found on the paper unit and when any of the functions use paper the all use the paper from the same place. See Paragraphs 28 and See Figure 1 and 2).

Shimizu'701 fails to show an image quality retaining means for retaining a quality of an image reproduced via the extension control means at a high level similar to that of an image produced by the image copying function.

Kurozasa'526 teaches an image quality retaining means for retaining a quality of an image reproduced via the extension control means at a high level similar to that of an

image produced by the image copying function (i.e., the image signal processing unit includes an image quality correction unit. See Column 7, Lines 4-10).

Having the system of Shimizu'701 and then given the well-established teaching of the Kurozasa'526, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 as taught by the Kurozasa'526, since it helps improve the image quality as suggested in reference Kurozasa'526 Column 7, Lines 14-16.

The combination of Shimizu'701 and Kurozasa'526 fails to show a line decimation control means for converting resolution of the image data; pixel loss compensation means for compensating for a loss of pixel information caused by line decimation and a sheet-through document feeder.

Murata'513 teaches an image reproduction apparatus with line decimation control means for converting the resolution of the image data (i.e., the line thinning/decimation means reduces the lines resolution of the image. See Column 3, Lines 64-67); and pixel loss compensation means for compensating for a loss of pixel information caused by line decimation (i.e., interpolation between lines means avoids degradation of resolution of the quality of images. See Column 3, Lines 42-47) and a sheet-through document feeder (i.e., a document fed one by one. See Column 1, Lines 50-55).

Having the system of Shimizu'701 and Kurozasa'526 and then given the well-established teaching of the Murata'513, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 and Kurozasa'526 as taught by the Murata'513, since using line thinning

means is a simpler structure and it eliminates the necessity of raising the secondary scanning speed to process the resolution as suggested in reference Murata'513 Column 4, Lines 4-10.

The combination of Shimizu'701, Kurozasa'526 and Murata'513 fails to show an invalid pixel detection means for detecting an invalid pixel that causes a streak image in an image read using a sheet-through document feeder; streak image correction means for correcting the streak image; and warning means for warning of an occurrence of the invalid pixel.

Kelly'083 teaches an invalid pixel detection means for detecting an invalid pixel (i.e., pixel errors/invalid are detected in an image. See Column 1, Lines 29 and 39-41 See Column 2, Lines 5-8) that causes a streak image in an image read (i.e., corrupted image line. See Column 2, Lines 4-5); streak image correction means for correcting the streak image (i.e., error correction mode contain correction patterns to correct errors. See Column 1, Lines 39-42); and warning means for warning of an occurrence of the invalid pixel (i.e., when the image data is requested to be received again a warning of an error is being made. See Column 1, Lines 39-43).

Having the system of Shimizu'701, Kurozasa'526 and Murata'513 and then given the well-established teaching of the Kelly'083, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701, Kurozasa'526 and Murata'513 as taught by the Kelly'083, since using the technique of identifying the strike image and corrected will improve the image

quality of an image being processed as suggested in reference Kelly'083 Column 1, Lines 9-11.

Regarding **Claim 10**, the combination of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 shows an image reproduction apparatus wherein the invalid pixel detection means (i.e., pixel errors/invalid are detected in an image. See Column 1, Lines 29 and 39-41 See Column 2, Lines 5-8 in reference Kelly'083) reads a background plate of the sheet-through document feeder (i.e., a document fed one by one. See Column 1, Lines 50-55 in reference Murata'513) and detects sizes of invalid pixels and a total number of invalid pixels (i.e., the error contains a magnitude which turns into multiple bits/pixels. See Column 4, Lines 29-34 in reference Kelly'083).

Regarding **Claim 11**, the combination of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 shows an image reproduction apparatus wherein the invalid pixel detection means manages the history of occurrence of detected invalid pixels and records the history as invalid pixel occurrence information on detection result recording means (i.e., depending on the errors found correction patterns are saved to fix those errors when found again. See Column 1, Lines 66-67, See Column 2, Lines 1-13 and See Column 9, Lines 15-30 in reference Kelly'083).

Regarding **Claim 15**, the combination of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 shows an image reproduction apparatus wherein the detection result recording means includes a nonvolatile storage means (i.e., RAM element 203. See Figure 6 in reference Kurozasa'526).

7. **Claim 6, 9, 12-14 and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Kurozasa (US Patent Number 6,278,526 B1), further in view of Hill et al. (US Patent Number 5,528,740), further in view of Kelly et al. (US Patent Number 5,727,083) and in further in view of Nishij et al. (European Patent Application EP0926622 A2).

Regarding **Claim 6**, the combination of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 fails to show an image reproduction apparatus comprising: sequential line discrimination/control means for, when color image data is input using a contact image sensor as the image input means, detecting the color of image data currently being transmitted and processed and for controlling a reading of a plurality of data lines at a time on a color-by-color basis.

Nishij'622 teaches an image reproduction apparatus comprising: sequential line discrimination/control means for, when color image data is input using a contact image sensor as the image input means, detecting the color of image data currently being transmitted and processed and for controlling a reading of a plurality of data lines at a time on a color-by-color basis (i.e., the process can be equally done for color image and monochrome image. See Column 5, Lines 50).

Having the system of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 and then given the well-established teaching of the Nishij'622, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 as taught by the Nishij'622, since applying the process to color images helps improving the system to be

more efficient and able to process more variety of documents as suggested in reference Nishij'622 in column 5, Lines 35-50.

Regarding **Claim 9**, the combination of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 shows a history recording means for recording a history of the occurrence of the invalid pixel detected by the invalid pixel detection means (i.e., depending on the errors found correction patterns are saved to fix those errors. See Column 1, Lines 66-67, See Column 2, Lines 1-13 and See Column 9, Lines 15-30 in reference Kelly'083) and warning means for when the invalid pixel is found based on the history recording means (i.e., when the image data is requested to be received again a warning of an error is being made. See Column 1, Lines 39-43 in reference Kelly'083).

The combination of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 fails to show a blank document page detection means for detecting a blank document page; blank document page warning means to warn, if the read document page is determined to be blank, that the read document is blank; and reading job control means for controlling an output of a document read in a reading job in accordance with a result of the determination made by the blank document page warning means.

Nishij'622 teaches a blank document page detection means for detecting a blank document page (i.e., a blank/empty page is detected. See Column 2, Lines 42-47); blank document page warning means to warn if the read document page is determined to be blank (i.e., trial mode shows the document minimized, where it can be check if there is an blank image. See Column 2, Lines 31-40); and reading job control means for controlling an output of a document read in a reading job in accordance with a result of

the determination made by the blank document page warning means (i.e., graphic data detector/reader controls the recording medium depending the data found. See Column 3, Lines 45-50 and See Column 8, Lines 35-40 and 45-50).

Having the system of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 and then given the well-established teaching of the Nishij'622 , it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701, Kurozasa'526, Murata'513 and Kelly'083 as taught by the Nishij'622, since using a blank page detector can improve the system to not permit to print blank pages that can be another type of invalid pixel found as suggested in reference Nishij'622 Column 2, Lines 45-46.

Regarding **Claim 12**, the combination of Shimizu'701, Kurozasa'526, Murata'513, Kelly'083 and Nishij'622 shows an image reproduction apparatus wherein the blank document page detection means detects a blank document page (i.e., a blank/empty page is detected. See Column 2, Lines 42-47 in reference Nishij'622) by dividing one page of the read document image into a plurality of blocks, detects a total number of invalid pixels and a number of invalid pixels at successive locations in each block, and calculates sums of the numbers over all blocks (i.e., an image is segmented into packets/blocks and a cyclic redundancy sum is done to detect the errors. See Column 1, Lines 39-43 in reference Kelly'083).

Regarding **Claim 13**, the combination of Shimizu'701, Kurozasa'526, Murata'513, Kelly'083 and Nishij'622 shows an image reproduction apparatus wherein the blank document page detection means detects a blank document page (i.e., a blank/empty

page is detected. See Column 2, Lines 42-47 in reference Nishij'622) by dividing one page of the read document image into a plurality of blocks, detects a total number of invalid pixels and a number of invalid pixels at successive locations in each block, calculates sums of the numbers over all blocks (i.e., an image is segmented into packets/blocks and a cyclic redundancy sum is done to detect the errors. See Column 1, Lines 39-43 in reference Kelly'083), determines from the calculated sums a streak image that is predicted to occur (i.e., from the errors detected, possible errors can be predicted. See Column 1, Lines 65-67 and Column 2, Lines 1-10 in reference Kelly'083), subtracts a streak image component caused by successively located invalid pixels from the document image data, thereby predicting a real state of the document, and determines from the predicted real state whether the document page is a blank document page or a document page including a streak image (i.e., when errors are predicted the correction patterns are used. See Column 2, Lines 1-22 in reference Kelly'083).

Regarding **Claim 14**, the combination of Shimizu'701, Kurozasa'526, Murata'513, Kelly'083 and Nishij'622 shows an image reproduction apparatus wherein the blank document page detection means manages information indicating whether document pages read in the reading job are blank, in units of document pages, and records the information as blank document page detection information on detection result recording means (i.e., blank page detector detects blank pages in documents. See Column 2, Lines 40-50 See Figure 2 in reference Nishij'622).

Regarding **Claim 16**, the combination of Shimizu'701, Kurozasa'526, Murata'513, Kelly'083 and Nishij'622 shows an image reproduction apparatus comprising display means for displaying results of detection made by the invalid pixel detection means and the blank document page detection means (i.e., the trial mode display a minimize version of the documents to be processed so the user can verify them to see if there is any errors/strikes or blank pages. See Column 2, Lines 34-45 in reference Nishij'622).

Regarding **Claim 17**, the combination of Shimizu'701, Kurozasa'526, Murata'513, Kelly'083 and Nishij'622 shows an image reproduction apparatus comprising image output means for outputting, on paper, results of detection made by the invalid pixel detection means and the blank document page detection means (i.e., the user checks error/strikes/blank pages and decides if they should be printed giving a paper record of them. See Column 2, Lines 34-45 and See Column 3, Lines 45-55 in reference Nishij'622).

Regarding **Claim 18**, the combination of Shimizu'701, Kurozasa'526, Murata'513, Kelly'083 and Nishij'622 shows an image reproduction apparatus wherein results of detection made by the invalid pixel detection means and the blank document page detection means are transmitted to an external apparatus via communication means connected to the extension control means (i.e., the extension controller allows control from external devices connected to the scanner, printer or other extension connected if the detection means can be found on the extension connected there will be communication between the apparatuses via the external control means. See

Paragraphs 44 and 49 and See Paragraphs 44-46 and 100 See Figure 3 numerals 53 and 49 in reference Shimizu'701).

8. **Claims 19-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Murata et al. (US Patent Number 6,278,513 B1).

Regarding **Claim 19**, Shimizu'701 shows an image reproduction method of reproducing input image data such as that obtained by reading a document and outputting the reproduced image data(i.e., a copy machine copies the image information from an original and outputs the information. See Paragraphs 4 and 7).

Shimizu'701 fails to show the method controlling inputting/outputting of image data depending on an output characteristic of image data output from image input means such that the image input means is allowed to input/output image data in a same form.

Murata'513 teaches a method controlling inputting/outputting of image data depending on an output characteristic of image data output from image input means such that the image input means is allowed to input/output image data in a same form (i.e., depending on the document inputted the system controls what type of process are going to be done to the image data, line thinning/decimation depends on the image being processed and the system allows other documents to be processed the same way. See Column 1, Lines 50-30, See Column 3, Lines 42-45 and See Column 4, 3-10).

Having the system of Shimizu'701 then given the well-established teaching of the Murata'513, it would have been obvious to one having ordinary skill in the art at the time

of the invention was made to modify the system of Shimizu'701 as taught by the Murata'513, since using line thinning means is a simpler structure and it eliminates the necessity of raising the secondary scanning speed to process the resolution as suggested in reference Murata'513 Column 4, Lines 4-10.

Regarding **Claim 20**, the combination of Shimizu'701 and Murata'513 shows an image reproduction method comprising converting a resolution of the image data (i.e., the line thinning/decimation means reduces the lines resolution of the image. See Column 3, Lines 64-67); and compensating for a loss of pixel information caused by line decimation (i.e., interpolation between lines means avoids degradation of resolution of the quality of images. See Column 3, Lines 42-47).

9. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Murata et al. (US Patent Number 6,278,513 B1) and further in view of Feng et al. (US Patent Number 7,312,898 B2).

Regarding **Claim 21**, the combination of Shimizu'701 and Murata'513 fails to show an image reproduction method comprising converting a data format of image data such that outputting of image data is performed in a same manner regardless of whether the image data is color image data or monochrome image data.

Feng'898 teaches an image reproduction method comprising converting a data format of image data such that outputting of image data is performed in a same manner regardless of whether the image data is color image data or monochrome image data

(i.e., format conversion means that converts the data to the chosen format to perform the communication protocol. See Column 1, Lines 6-13).

Having the system of Shimizu'701 and Murata'513 and then given the well-established teaching of the Feng'898, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 and Murata'513 as taught by the Feng'898, since using format conversion means allows the image reproduction apparatus support a variety of document types and communication protocols as suggested in reference Feng'898 Column 1, Lines 11-12.

10. **Claim 22** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Kelly et al. (US Patent Number 5,727,083).

Regarding **Claim 22**, Shimizu'701 teaches an image reproduction method comprising: reading an image (i.e., a copy machine copies/reads the image information from an original and outputs the information. See Paragraphs 4 and 7).

Shimizu'701 fails to show detecting an invalid pixel from the image read in the reading step; detecting a maximum width of invalid pixels detected in the step of detecting the invalid pixel; detecting a number of invalid pixels detected in the step of detecting the invalid pixel; detecting allocation, on a document, of each invalid pixel detected in the step of detecting the invalid pixel; predicting an occurrence of a streak image in a document image from results of detection made in the step of detecting the maximum width, the step of detecting the number of invalid pixels, and the step of

detecting the location of each invalid pixel; and correcting the streak image in the document image based on a result of the prediction made in the predicting step.

Kelly'083 teaches detecting an invalid pixel from the image read in the reading step (i.e., pixel errors/invalid are detected in an image. See Column 1, Lines 29 and 39-41 See Column 2, Lines 5-8); detecting a maximum width of invalid pixels detected in the step of detecting the invalid pixel and detecting a number of invalid pixels detected in the step of detecting the invalid pixel (i.e., the error contains a magnitude which turns into multiple bits/pixels. See Column 4, Lines 29-34); detecting allocation, on a document, of each invalid pixel detected in the step of detecting the invalid pixel (i.e., pixel errors/invalid are detected in an image. See Column 1, Lines 29 and 39-41 See Column 2, Lines 5-8); predicting an occurrence of a streak image in a document image from results of detection made in the step of detecting the maximum width, the step of detecting the number of invalid pixels, and the step of detecting the location of each invalid pixel (i.e., from the errors detected, possible errors can be predicted. See Column 1, Lines 65-67 and Column 2, Lines 1-10 in reference Kelly'083); and correcting the streak image in the document image based on a result of the prediction made in the predicting step (i.e., when errors are predicted the correction patterns are used. See Column 2, Lines 1-22 in reference Kelly'083).

Having the system of Shimizu'701 and then given the well-established teaching of the Kelly'083, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 as taught by the Kelly'083, since using the process of detecting invalid/error pixels and streak image

implemented in a image reproducing device when reading an image would improve the reading process and improve the quality of the image read as suggested in reference Kelly'083 Column 1, Lines 9-12.

11. **Claims 23-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Kelly et al. (US Patent Number 5,727,083) and further in view of Nishij et al. (European Patent Application EP0926622 A2).

Regarding **Claim 23**, Shimizu'701 shows teaches an image reproduction method comprising: reading an image (i.e., a copy machine copies/reads the image information from an original and outputs the information. See Paragraphs 4 and 7).

Shimizu'701 fails to show dividing the image into blocks with a predetermined block size; detecting a total number of invalid pixels and a number of invalid pixels at successive locations in each block produced in the dividing step.

Kelly'083 teaches dividing the image into blocks with a predetermined block size (i.e., an image is segmented into packets/blocks to detect the errors. See Column 1, Lines 39-43); detecting a total number of invalid pixels and a number of invalid pixels at successive locations in each block produced in the dividing step (i.e., an image is segmented into packets/blocks and a cyclic redundancy sum is done to detect the errors. See Column 1, Lines 39-43).

Having the system of Shimizu'701 and then given the well-established teaching of the Kelly'083, it would have been obvious to one having ordinary skill in the art at the

time of the invention was made to modify the system of Shimizu'701 as taught by the Kelly'083, since using the process of detecting invalid/error pixels and streak image implemented in a image reproducing device when reading an image would improve the reading process and improve the quality of the image read as suggested in reference Kelly'083 Column 1, Lines 9-12.

The combination of Shimizu'701 and Kelly'083 fails to show detecting a blank document page.

Nishij'622 teaches detecting a blank document page (i.e., a blank/empty page is detected. See Column 2, Lines 42-47 in reference Nishij'622).

Having the system of Shimizu'701 and Kelly'083 and then given the well-established teaching of the Nishij'622, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 and Kelly'083 as taught by the Nishij'622, since using a blank page detector can improve the system to not permit to print blank pages that can be another type of invalid pixel found as suggested in reference Nishij'622 Column 2, Lines 45-46.

Regarding **Claim 24**, Shimizu'701 shows teaches an image reproduction method comprising: reading an image (i.e., a copy machine copies/reads the image information from an original and outputs the information. See Paragraphs 4 and 7).

Shimizu'701 fails to show detecting dividing the image into blocks with a predetermined block size (i.e., an image is segmented into packets/blocks to detect the errors. See Column 1, Lines 39-43); detecting a total number of invalid pixels and a

number of invalid pixels at successive locations in each block produced in the dividing step (i.e., pixel errors/invalid are detected in an image. See Column 1, Lines 29 and 39-41 See Column 2, Lines 5-8); determining a streak image which is predicted to occur, from results of detection made in detecting step in terms of the total number of invalid pixels and the number of invalid pixels at successive locations in respective blocks, and subtracting a streak image component caused by successively located invalid pixels from the document image data (i.e., corrupted/strike image line are detected when located the invalid/error pixels. See Column 2, Lines 4-5), thereby predicting a real state of the document, and determining from the predicted real state whether the document page is a document page including a streak image (i.e., from the errors detected, possible errors can be predicted. See Column 1, Lines 65-67 and Column 2, Lines 1-10 in reference Kelly'083).

Having the system of Shimizu'701 and then given the well-established teaching of the Kelly'083, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 as taught by the Kelly'083, since using the process of detecting invalid/error pixels and streak image implemented in a image reproducing device when reading an image would improve the reading process and improve the quality of the image read as suggested in reference Kelly'083 Column 1, Lines 9-12.

The combination of Shimizu'701 and Kelly'083 fails to teach determining whether a document page is blank and determining from the predicted real state whether the

document page is a blank document page (i.e., a blank/empty page is detected. See Column 2, Lines 42-47 in reference Nishij'622).

Having the system of Shimizu'701 and Kelly'083 and then given the well-established teaching of the Nishij'622, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701 and Kelly'083 as taught by the Nishij'622, since using a blank page detector can improve the system to not permit to print blank pages that can be another type of invalid pixel found as suggested in reference Nishij'622 Column 2, Lines 45-46.

Regarding **Claim 25**, the combination of Shimizu'701, Kelly'083 and Nishij'622 shows a program for causing a computer to execute the method described (i.e., the method is performed by a program. See Paragraphs 13 in reference Shimizu'701).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Iriana Cruz whose telephone number is (571) 270-3246. The examiner can normally be reached on Monday-Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Iriana Cruz
Examiner
Art Unit 2625

February 15, 2008

GABRIEL GARCIA
PRIMARY EXAMINER